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NOTES ON GEOGRAPHIC DISTRIBUTION

Anura, Hylidae, *Dendropsophus nahdereri* (Lutz and Bokermann, 1963): Distribution extension and new state record

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ABSTRACT: *Dendropsophus nahdereri* is included in the *Dendropsophus marmoratus* group. Its distribution is known from the Brazilian states of Paraná and Santa Catarina. Here we report new records of this species and briefly describe the habitat of calling males. We found new localities of occurrence of *D. nahdereri* in Brazilian states of Santa Catarina and Rio Grande do Sul. We collected calling males in temporary lentic water bodies surrounded by arboreal vegetation, inside and on the border of native forest, and inside *Pinus* plantations near native forest.

Dendropsophus nahdereri (Lutz and Bokermann, 1963) (Figure 1) is a treefrog included in the *Dendropsophus marmoratus* group and is one of the largest species in the genus (Lutz and Bokermann 1963; Faivovich *et al.* 2005). Its distribution is known from some localities in the Brazilian states of Paraná and Santa Catarina along the Atlantic forests in the southern Brazil, in altitudes ranging from 100 to 950 m (Lutz and Bokermann 1963; Ghizoni-Jr *et al.* 2000; Machado and Conte 2001; Gutsche *et al.* 2007; Haddad *et al*. 2008; Orrico *et al*. 2009; Conte *et al*. 2010) (Figure 2). Colombo and Zank (2008) mentioned the occurrence of *D. nahdereri* in Rio Grande do Sul based only on vocalization activity and did not provide vouchers or report specific localities. Here we report, based on collected material, new records that expand the distribution for this species and briefly describe the habitat of calling males in these new localities. Voucher specimens are housed in Coleção Herpetológica, Departamento de Zoologia, Universidade Federal do Rio Grande do Sul (UFRGS).

In recent field expeditions to the state boundaries of Rio Grande do Sul and Santa Catarina, Brazil, along the Pelotas River, we found three new localities of occurrence of *Dendropsophus nahdereri*. Specimens of *D. nahdereri* were found in one locality in municipality of Bom Jesus, Rio Grande do Sul, Brazil (UFRGS 3308-3310, three adult males, 29 September 2008, 28°18'22" S, 50°42'37" W), and two localities in municipality of Campo Belo do Sul, Florestal Gateados, Santa Catarina, Brazil (UFRGS 2578-2579, two adult males, 27 June 2006; UFRGS 3074, UFRGS 3134, UFRGS 3209, three juveniles, 29 February 2008, 28°02'01" S, 50°51'10" W; no voucher, 27°59'32" S, 50°53'48" W) (Figure 2).

We collected five calling males of *Dendropsophus nahdereri* in temporary lentic water bodies surrounded by arboreal vegetation inside native forest (Figure 3) at night. We observed other males calling in temporary water bodies on the border of forest (in remnants or continuous forest), and inside *Pinus* plantations near native forest. We

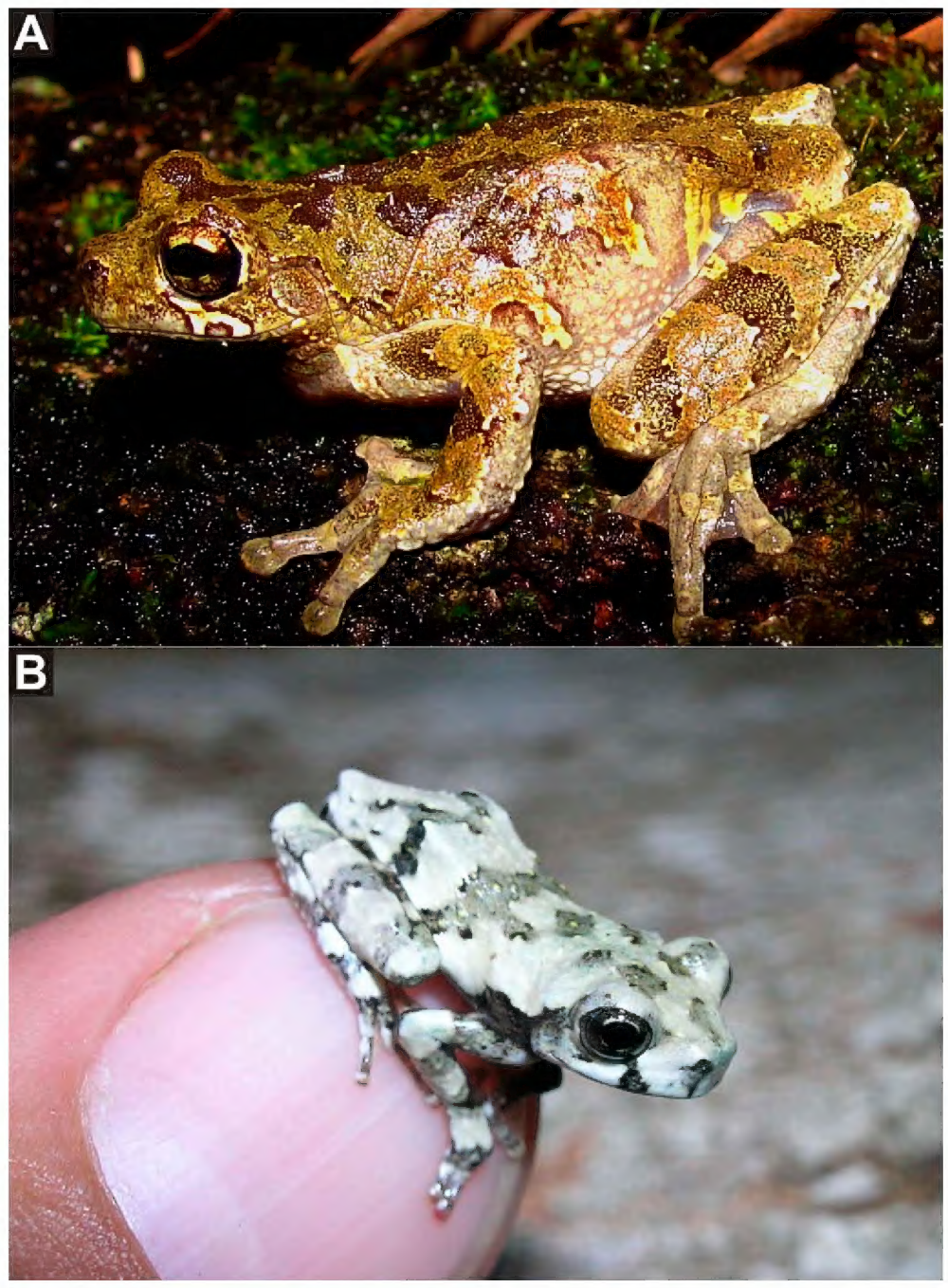

FIGURE 1. A) Adult male of *Dendropsophus* nahdereri (snout-vent length – 47,5 mm, UFRGS 3308) from municipality of Bom Jesus, Rio Grande do Sul state, Brazil (28°18'22" S, 50°42'37" W); B) juvenile of *D. nahdereri* (snout-vent length – 27,3 mm, UFRGS 3134) from municipality of Campo Belo do Sul, Florestal Gateados, Santa Catarina state, Brazil (28°02'01" S, 50°51'10" W). Photos: Rafael L. Balestrin (A) and Patrick Colombo (B).

also collected three juveniles of *D. nahdereri* (Figure 1B) (identified by the color pattern of thigh and the shape of snout) in 29 February 2008 (locality 2, Figure 2). One of these individuals was on shrubs and two of them moving in the leaf litter inside native forest.

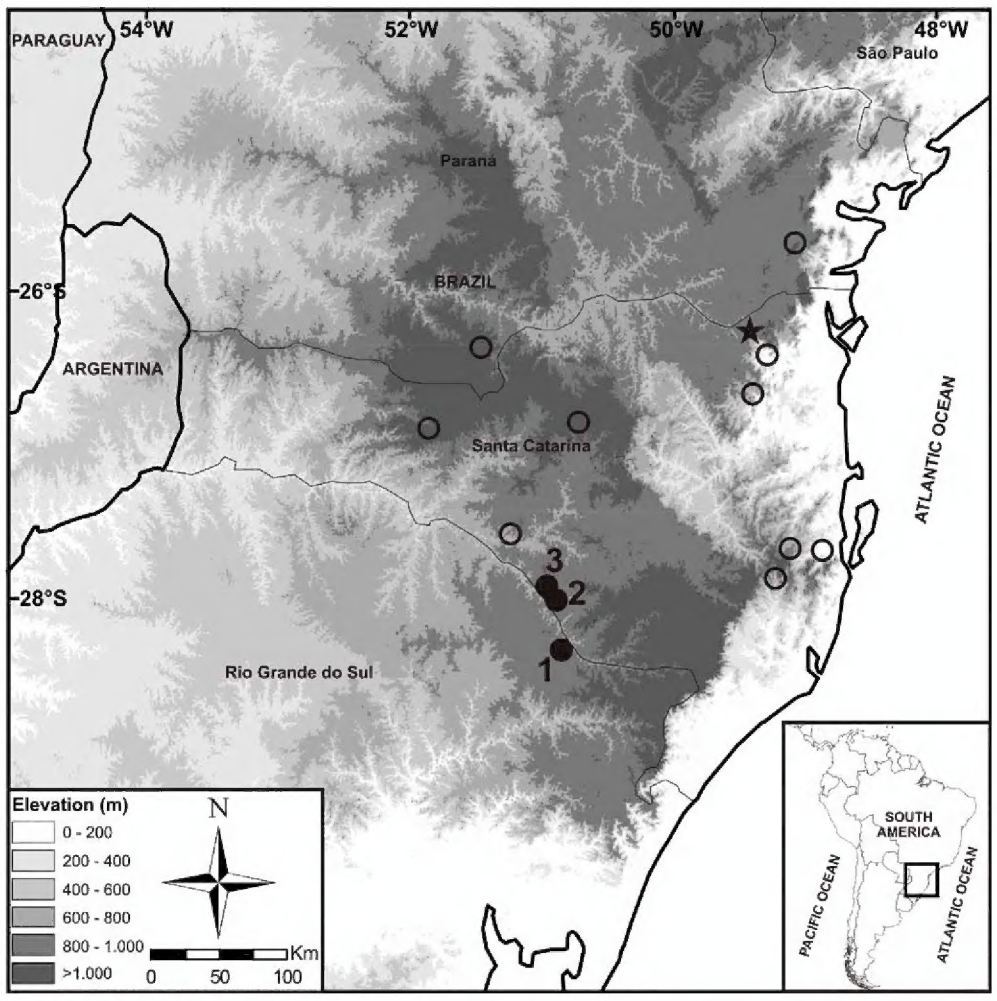

FIGURE 2. Known distribution and new records of *Dendropsophus nahdereri*. Star: type locality, municipality of São Bento do Sul, Santa Catarina state, Brazil. Open circles: published records of *D. nahdereri* (References, including type locality, are given in the text and Appendix 1). Solid circles: new records of *D. nahdereri*: 1 – municipality of Bom Jesus, Rio Grande do Sul state, Brazil (28°18'22" S, 50°42'37" W), 2 and 3 - municipality of Campo Belo do Sul, Florestal Gateados, Santa Catarina state, Brazil (28°02'01" S, 50°51'10" W and 27°59'32' S, 50°53'48" W, respectively).

This report represents the first record of *Dendropsophus nahdereri* for the state of Rio Grande do Sul, raising to 104 the number of anuran species known to the state (Braun and Braun 1980, 1981; Braun *et al.* 1981; Garcia and Vinciprova 1998; Kwet and Di Bernardo 1999; Canavero *et al.* 2001; Giasson 2001; Giasson and Cechin 2001; Kwet 2001; Tedros *et al*. 2001; Caramaschi and Cruz 2002; Di-Bernardo *et al*. 2006; Lingnau *et al*. 2006; Kwet *et al*. 2006; Colombo *et al*. 2007; Garcia *et al*. 2007; Zanella *et al*. 2007; Kwet 2008; Both *et al*. 2009; Iop *et al*. 2009).

Lutz and Bokermann (1963) observed *Dendropsophus nahdereri* in rain forest partly destroyed by man. Machado and Conte (2001) found this species in low vegetation bordering a lake near disturbed mixed temperate rain forest at night. Orrico *et al.* (2009) registered males of *D. nahdereri* calling hidden in emerging aquatic vegetation near the water level, on perches or branches around a pond and perched in shrubs at heights up to 1–5 meters. Conte *et al*. (2010) observed males calling inside forest in top of trees hidden in cracks and bromeliads at afternoon. At the dusk, these authors registered calling males in temporary water bodies in the edge or inside forest remnants, using branches or cracks of trees as perches, and eventually calling directly at the soil. As described by Conte and Rossa-Feres (2006) and Conte *et al*. (2010) we also registered some males of *D. nahdereri* calling occasionally during the day, not in epiphytic bromeliads as observed by these authors, but in trees at approximately ten meters high, possibly hidden in cracks as Conte *et al*. (2010) found.

Conte and Rossa-Feres (2006) observed males of one population of *Dendropsophus nahdereri* in Paraná calling in the rainy and warm season (September to January). Orrico *et al.* (2009) registered calling males in the state of Santa Catarina in winter and spring (August, September and December), and Conte *et al*. (2010), in other localities in Paraná and Santa Catarina, registered males from August to November. We found males in southern Santa Catarina and Rio Grande do Sul calling mainly in spring (September, October and November), however we also observed males calling in autumn and winter (April, May, June and July).

FIGURE 3. Two different collection sites of *Dendropsophus nahdereri* in locality 2, Florestal Gateados, municipality of Campo Belo do Sul, Santa Catarina state, Brazil. Photos: Patrick Colombo.

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Appendix 1. List of published records of *Dendropsophus nahdereri* in three Brazilian states of Rio Grande do Sul, Santa Catarina and Paraná with their coordinates and references. These records are organized from southern to northern localities and were used to generate the distribution map.

RIO GRANDE DO SUL: municipality of Bom Jesus, 28°18'22'' S, 50°42'37'' W (this work). SANTA CATARINA: municipality of Campo Belo do Sul, Florestal Gateados, 28°02'01'' S, 50°51'10'' W and 27°59'32'' S, 50°53'48'' W, (this work); municipality of Anitápolis, 27°52'26'' S, 49°07'39'' W, (Orrico et al. 2009); municipality of Santo Amaro da Imperatriz, 27°41' S, 48°46' W (Conte et al. 2010), these coordinates are from city proper of municipality of Santo Amaro da Imperatriz, taken from free software Google Earth™; municipality of Rancho Queimado, 27°40' 21'' S, 49°01'18" W (Garcia and Vinciprova 1998); municipality of Campos Novos, Ibicuí River, 27°34'30" S, 51°10'10" W, (Garcia and Vinciprova 1998); municipality of Vargem Bonita, 26°53' S, 51°48' W (Conte et al. 2010); municipality of Lebon Régis, Fazenda Serra da Esperança, 26°51'13" S, 50°40'00" W, (Orrico et al. 2009); municipality of Rio dos Cedros, Usina Hidrelétrica Cedros/Palmeiras da Centrais Elétricas de Santa Catarina S.A., 26°40' S, 49°20' W (Ghizoni-Jr et al. 2000); municipality of Corupá, Humboldt River, 26°24' S, 49°14' W (Gutsche et al. 2007), these coordinates are from city proper of municipality of Corupá near Humboldt River, taken from free software Google Earth™. PARANÁ: municipality of General Carneiro, 26°22' S, 51°22' W (Conte et al. 2010). SANTA CATARINA: municipality of São Bento do Sul, Estrada Saraiva, type locality, 26°14'55" S, 49°22'50" W, (Lutz and Bokermann 1963). PARANÁ: municipality of São José dos Pinhais, Serro e Gemido, 25°41' S, 49°03' W (Machado and Conte 2001).